

CLAIMS

What is claimed is:

1. A palletizer comprising:  
5 an infeed conveyor delivering serially items for palletizing;  
a row conveyor receiving selected ones of said items as a row from said infeed conveyor; and  
a layer head receiving selected ones of said items as a row from said row conveyor, said row conveyor and said layer head being reciprocated vertically and independently.  
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2. A palletizer according to claim 1 wherein said layer head occupies a space vertically above at least one of a pallet and a stack of layers on a pallet and discharges a layer of items through a floor thereof.
- 15 3. A palletizer according to claim 2 wherein said floor of said layer head comprises a set of free rollers spanning a pair of chains, said rollers being movable between a floor position and an open position, said open position allowing a layer to drop through a plane corresponding to said floor position.
- 20 4. A palletizer according to claim 3 wherein said layer head includes at least one upward facing support surface adjacent said rollers when said rollers are positioned in said floor position.
5. A palletizer according to claim 1 wherein said layer head includes a pivoting dead  
25 plate, said dead plate being movable between a generally horizontal position facilitating transfer of a row of items from said row conveyor and a clamping position engaging for compression a layer of said items on said layer head.

6. A palletizer according to claim 1 wherein said layer head includes a pair of side clamps movable inward and toward one another to engage for compression a layer of said items resting on said layer head.

5           7. A palletizer according to claim 1 wherein said layer head includes a layer conditioning mechanism compressing together a layer of items resting thereon in at least first and second dimensions.

10           8. A palletizer according to claim 7 wherein said first and second dimensions are mutually orthogonal dimensions.

15           9. A palletizer according to claim 1 wherein said layer head includes a pair of chains maintained in a generally L-shaped path and carrying thereacross and along corresponding segments thereof a set of free rollers, said rollers occupying a floor position when located along a horizontal portion of said L-shaped path and occupying an open position when located along a vertical portion of said L-shaped path.

20           10. A palletizer according to claim 1 wherein said layer head includes a set of free rollers movable between a floor position and an open position, said rollers having a length corresponding to a tightly-packed layer resting thereon when said rollers are in said floor position and dropping said layer through a plane containing said floor position when moved to said open position.

25           11. A palletizer according to claim 10 wherein said layer head comprises a pair of upward facing support surfaces at respective ends of said rollers when located at said floor position.

12. A method of palletizing comprising:  
receiving serially items for palletization;

- 15 -

locating selected ones of said items row-by-row on a vertically reciprocating row conveyor;

moving said row conveyor to a height coincident with a layer head;

transferring laterally a row of said items from said row conveyor to said layer head

5 while constructing a layer of rows on said layer head; and

dropping through a floor of said layer head a layer of said items onto at least one of a pallet and a stack of layers resting on said pallet therebelow.

13. A method according to claim 12 wherein said method further comprises  
10 conditioning by compressing a layer of said items as constructed on said layer head from a loosely packed layer into a tightly packed layer prior to dropping said layer through said layer head.

14. A method according to claim 12 wherein said step of dropping comprises moving  
15 from a supporting position below said layer a set of rollers to withdraw support thereof and allow said layer to drop vertically through said layer head.